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# Hot New Space Concepts to Operationalize Space

man-portable Space Control systems; SATCOM laser linked constellations and networks; theater controlled Space imaging systems; jam resistant, positioning, navigation and timing systems; and networked, theater missile warning systems. These are a few of the concepts I have heard about or been involved in working on during the past six years. While some of these ideas seem far fetched and have almost no chance of ever becoming operational systems, others do seem plausible and in fact are in various stages of development. Whether feasible or not, what links them together is the fact that they all began as someone's idea in an effort to solve an operational shortcoming.

This quarter's issue of the Army Space Journal is dedicated to exploring "Hot, New Space Concepts." Articles in this issue will focus on efforts within the joint community, as well as within the Army and the Future Warfare Center to identify, explore and develop new concepts. Merriam-Webster's dictionary defines a concept as, "something conceived in the mind; a thought or notion, or an abstract or generic idea generalized from particular instances." Currently, the Army and the joint community are pursuing a number of new Space capabilities, among them; improved satellite communications, enhanced Space-based intelligence, surveillance and reconnaissance, responsive launch, and improved protection. The National Security Space community, as well as industry, is developing these new technologies and systems to provide new operational capabilities, expanded capacities, and/or gain operating efficiencies. Yet one concept, above everything else, is driving the Army's thinking about Space and shaping our participation in developing these future Space capabilities.

Since the launch, of then Chief of Staff, General Shinseki's Army transformation efforts the Army has sought new ways to leverage

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Space capabilities in order to enable, enhance, and support land component operations. The Army has been actively seeking to operationalize Space; bringing Space capabilities into its operational and tactical level forces and formations from the national/strategic level. The Army is pushing Space enabled capabilities and systems down to tactical echelons and forward on the battlefield. The Army has recognized that it is more than just a Space enabled force, but is in fact a Space empowered force. Soldiers on the front lines rely on imagery, communications, timing, navigation and missile warning provided, or enabled, from Space-based systems in order to accomplish their missions successfully. “Hot, new Space concepts” are of little or no value to the Army if they are not providing direct support capabilities to the Land Component Commander and the forces under his command.

Two and a half years ago U.S. Training and Doctrine Command published the Space Operations Concept and Capability Plan authored by the U.S. Army Space and Missile Defense Command Battle Lab. The Concept and Capability Plan’s central thesis stated that the traditional role of Space support to land component operations had focused on global strategic missions, and that theater focused operational and tactical Space applications had generally been “piggy-backed” on strategic assets. This traditional way of thinking about Space is no longer acceptable. To realize the Army’s Capstone Concept, of becoming a “strategically responsive, campaign quality force, dominate across the spectrum of conflict,” the capabilities provided by Space-based systems must move into a direct support role for land component operations.<sup>1</sup> In order to develop these Space-based direct support capabilities the Concept and Capability Plan defined four imperatives:

- Facilitate the integration of Space capabilities across the full spectrum of Army and joint operations.
- Improve the Army’s ability to exploit existing Space capabilities.
- Deliver Space capabilities that address Army needs (capability requirements) and priorities by influencing the design of Space-based systems and payloads.
- Systematically and deliberately evolve Army Space support operations over time to provide dedicated, responsive theater focused support operational and tactical commanders.<sup>2</sup>

On going work within U.S. Army Space and Missile Defense Command’s Future Warfare Center, which includes the Directorate of Combat Development, Decision Support Directorate and the Battle Lab, is focused on achieving these

four imperatives and consequently integrating and operationalizing Space into the Army in a direct support role. For example the Directorate of Combat Development recently has been working with Headquarters Department of Army Command Information Operation/G6, PM-SATCOM, Air Force Space A5 and U.S. Training and Doctrine Command to define the Army’s satellite communications needs and determine if the Transformational Satellite Communications System Digital Core variant met the Army’s operational requirements. Specifically the group has been assessing the brigade combat team’s future communication requirements and determining if Digital Core has the ability to meet these operational needs. In addition, the Future Warfare Center has been working with Command Information Operation/G6 and Air Force Space A5 to shape the design of the forthcoming GPS III constellation in order to ensure it meets the Army’s Time to First Fix operational requirements. Time to First Fix directly affects deployed soldiers; properly defining its requirements are critical to ensuring Army Forces have access to positioning, navigation and timing services immediately upon deploying into a distant theater or switching a GPS receiver on. Any delay or disruption to the timing signal could adversely affect land component operations. At the same time, Directorate of Combat Development’s Training Division is rapidly expanding training programs for uniform personnel, our Space Operations Officers, as well as our Space Cadre civilian personnel. Our goal is to improve training in order to systematically evolve Army Space support operations so as to provide enhanced, responsive, theater focused capabilities. These are only a few of the efforts that the Future Warfare Center is working on in order to bring “hot, new Space concepts” into operational reality.

A “hot, new Space concept” may be exciting and hold great promise. However no concept, no matter how hot or new, is of any value in itself. A concept on its own does not provide any capability to our forces, only a foundation or starting point to developing a usable capability. It is the logical, progressive hard work done through experimentation, analysis, war-gaming, combat development, force design, doctrine writing, and training that brings a concept into operational reality and ultimately provides capabilities to our Soldiers. In the coming months and years the Future Warfare Center will continue to identify and develop new concepts – in the realms of high altitude, Space, and cyber – but our underlying objective will remain; bringing enhanced, responsive, theater focused operational capabilities to the Soldier on the front lines, ensuring his continued success! 

#### Footnotes

<sup>1</sup>TRADOC Pamphlet 525-7-4, Space Operations Concept: Capability Plan, Nov. 15, 2006, p. 18.

<sup>2</sup>Ibid., page i.